

REC'D OCT - 3 2017

14305 SOUTHCROSS DRIVE #150  
BURNSVILLE, MN 55306-7008  
MN.GOV/COMMERCE/  
651.539.1555 FAX 651.539.1553  
AN EQUAL OPPORTUNITY EMPLOYER

Receipt Date: January 10, 2017  
Cal. Date: January 20, 2017  
Report Date: January 24, 2017

Report No.: 337075  
Set Serial No.: #1235  
Barcode: 201270

## Calibration Certificate

NORTH COUNTRY BUSINESS PRODUCTS  
915 Stanley Street  
Belle Fourche, SD 57717  
Contact: CAROL BRAUN  
Phone: 218-722-3528  
PO Number: NONE  
SOP: 8  
Technician ID: 07

Item(s) Submitted: 30 lb Kit w/ Decimals  
Manufacturer: Troemner  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 20.5 °C  
Pressure: 725.9 mmHg  
Relative Humidity: 55.4 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb		121.4	121.4	F	F	2.01	6.0
5 lb		122.4	122.4	F	F	2.01	6.0
5 lb		109.4	109.4	F	F	2.01	6.0
5 lb		106.4	106.4	F	F	2.01	6.0
5 lb		82.4	82.4	F	F	2.01	6.0
1 lb		42.3	42.3	F	F	2.02	1.6
1 lb		29.3	29.3	F	F	2.02	1.6
1 lb		37.4	37.4	F	F	2.02	1.6
1 lb		47.7	47.7	F	F	2.02	1.6
1 lb		47.1	47.1	F	F	2.02	1.6
8 oz		25.4	25.4	F	F	2.02	1.3
0.2 lb		-0.84	-0.84	F	F	2.02	0.22
0.2 lb		4.06	4.06	F	F	2.02	0.22
0.1 lb		4.28	4.28	F	F	2.02	0.14
0.05 lb		0.29	0.29	F	F	2.02	0.11
0.02 lb		0.310	0.310	F	F	2.02	0.066
0.02 lb		0.530	0.530	F	F	2.02	0.066
0.01 lb		-0.228	-0.228	F	F	2.02	0.052
0.005 lb		0.634	0.634	F	F	2.03	0.073
0.002 lb		0.203	0.203	F	F	2.02	0.047
0.001 lb		-0.434	-0.434	F	F	2.03	0.041

Receipt Date: January 10, 2017  
Cal. Date: January 20, 2017  
Report Date: January 24, 2017

Report No.: 337075  
Set Serial No.: #1235  
Barcode: 201270

Continued,

## Calibration Certificate


NORTH COUNTRY BUSINESS PRODUCTS  
915 Stanley Street  
Belle Fourche, SD 57717  
Contact: CAROL BRAUN  
Phone: 218-722-3528  
PO Number: NONE  
SOP: 8  
Technician ID: 07

Item(s) Submitted: 30 lb Kit w/ Decimals  
Manufacturer: Troemner  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 20.5 °C  
Pressure: 725.9 mmHg  
Relative Humidity: 55.4 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
4 oz		6.09	6.09	F	F	2.00	0.22
2 oz		1.67	1.67	F	F	2.00	0.14
1 oz		2.09	2.09	F	F	2.00	0.11
1/2 oz		1.818	1.818	F	F	2.00	0.092
1/4 oz		1.347	1.347	F	F	2.00	0.056
1/8 oz		0.604	0.604	F	F	2.00	0.046
1/16 oz		0.206	0.206	F	F	2.00	0.070
1/32 oz		-0.187	-0.187	F	F	2.00	0.044
1/32 oz		-0.049	-0.049	F	F	2.00	0.044

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (*k*) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Mark Nicollet



Quality Manager

Reviewed by:

Erik Alfvin



Metrologist

REC'D OCT - 3 2017

Receipt Date: February 3, 2017  
Cal. Date: February 9, 2017  
Report Date: February 10, 2017

Report No.: 337191  
Set Serial No.: 2J9S  
Barcode: 202094

## Calibration Certificate

NORTH COUNTRY BUSINESS PRODUCTS  
2127 S. MINNESOTA AVE #205  
SIOUX FALLS, SD 57105

Contact: Carol Braun  
Phone: 218-722-3528  
PO Number: None  
SOP: 8  
Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - F  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 18.8 °C  
Pressure: 741.8 mmHg  
Relative Humidity: 47.4 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
10 lb	A	148	148	F	F	2.01	12
10 lb	B	179	179	F	F	2.01	12
5 lb		53.4	53.4	F	F	2.01	6.0
1 lb	A	33.1	33.1	F	F	2.01	1.6
1 lb	B	20.0	20.0	F	F	2.01	1.6
1 lb	C	14.3	14.3	F	F	2.01	1.6
1 lb	D	25.1	25.1	F	F	2.01	1.6
1 lb	E	26.9	26.9	F	F	2.01	1.6
4 oz	A	7.55	7.55	F	F	2.00	0.22
4 oz	B	5.54	5.54	F	F	2.00	0.22
4 oz	C	8.52	8.52	F	F	2.00	0.22
1 oz	A	0.03	0.03	F	F	2.00	0.11
1 oz	B	1.25	1.25	F	F	2.00	0.11
1 oz	C	1.20	1.20	F	F	2.00	0.11
1/2 oz		0.938	0.938	F	F	2.00	0.092
1/2 oz		1.158	1.158	F	F	2.00	0.092
1/4 oz		0.747	0.747	F	F	2.00	0.056
1/4 oz		0.997	0.997	F	F	2.00	0.056


The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin

  
Metrologist

Reviewed by:

Pete Whebbe

  
Metrologist

REC'D OCT - 3 2017

Receipt Date: February 7, 2017  
Cal. Date: February 14, 2017  
Report Date: February 14, 2017

Report No.: 337209  
Set Serial No.: None  
Barcode: 201574

## Calibration Certificate

NORTH COUNTRY BUSINESS PRODUCTS  
4624 AMBER VALLEY PKWY S  
FARGO, ND 58104-8612  
Contact: Dave Taylor  
Phone: 701-277-3231  
PO Number: None  
SOP: 8  
Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - F  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.5 °C  
Pressure: 734.3 mmHg  
Relative Humidity: 43.2 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb	A	24.4	24.4	F	F	2.01	6.0
5 lb	B	45.4	45.4	F	F	2.01	6.0
5 lb	C	47.4	47.4	F	F	2.01	6.0
5 lb	D	52.4	52.4	F	F	2.01	6.0
5 lb	E	38.4	38.4	F	F	2.01	6.0
1 lb	A	25.5	25.5	F	F	2.01	1.6
1 lb	B	15.1	15.1	F	F	2.01	1.6
1 lb	C	17.0	17.0	F	F	2.01	1.6
1 lb	D	12.3	12.3	F	F	2.01	1.6
1 lb	E	13.8	13.8	F	F	2.01	1.6
0.2 lb		6.69	6.69	F	F	2.02	0.22
0.2 lb		7.05	7.05	F	F	2.02	0.22
0.1 lb		1.84	1.84	F	F	2.02	0.14
0.05 lb		0.34	0.34	F	F	2.02	0.11
0.02 lb		0.301	0.301	F	F	2.02	0.066
0.02 lb		0.304	0.304	F	F	2.02	0.066
0.01 lb		0.578	0.578	F	F	2.02	0.052
0.005 lb		0.481	0.481	F	F	2.02	0.073
0.002 lb		0.141	0.141	F	F	2.02	0.047
0.002 lb		0.445	0.445	F	F	2.02	0.047
0.001 lb		0.207	0.207	F	F	2.02	0.041

Receipt Date: February 7, 2017  
Cal. Date: February 14, 2017  
Report Date: February 14, 2017

Report No.: 337209  
Set Serial No.: None  
Barcode: 201574

Continued,

## Calibration Certificate

NORTH COUNTRY BUSINESS PRODUCTS  
4624 AMBER VALLEY PKWY S  
FARGO, ND 58104-8612  
Contact: Dave Taylor  
Phone: 701-277-3231  
PO Number: None  
SOP: 8  
Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - F  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.5 °C  
Pressure: 734.3 mmHg  
Relative Humidity: 43.2 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
8 oz		6.2	6.2	F	F	2.02	1.3
4 oz		3.60	3.60	F	F	2.00	0.22
2 oz		2.82	2.82	F	F	2.00	0.14
1 oz		2.18	2.18	F	F	2.00	0.11
1/2 oz		0.858	0.858	F	F	2.00	0.092
1/4 oz		0.458	0.458	F	F	2.00	0.056
1/8 oz		0.352	0.352	F	F	2.00	0.046
1/16 oz		0.421	0.421	F	F	2.00	0.070
1/32 oz		0.303	0.303	F	F	2.00	0.044
1/32 oz		0.291	0.291	F	F	2.00	0.044

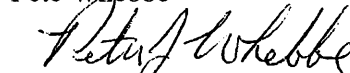
The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin

  
Metrologist

Reviewed by:

Pete Whebbe

  
Metrologist



REC'D OCT - 3 2017

Receipt Date: June 27, 2017  
 Cal. Date: July 7, 2017  
 Report Date: July 7, 2017

Report No.: 337900  
 Set Serial No.: FARGO WEIGHT SET #2  
 Barcode: 201683

## Calibration Certificate

NORTH COUNTRY BUSINESS PRODUCTS  
 1112 RAILROAD ST SE  
 BEMIDJI, MN 56619-0910  
 Contact: Carol Braun  
 Phone: 218-722-3528  
 PO Number: None  
 Procedure: NIST SOP 8  
 Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - Class F  
 Manufacturer: Rice Lake  
 Weight Type: I & II  
 Equipment ID: None  
 Condition: Good  
 Temperature: 19.3 °C  
 Pressure: 737.7 mmHg  
 Relative Humidity: 46.0 %

Nominal Value	Serial No.	<u>CM Correction (mg)</u>		<u>NIST HB105-1 Class</u>		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb		-15.6	-15.6	F	F	2.01	6.0
5 lb		-23.6	-23.6	F	F	2.01	6.0
5 lb		-12.6	-12.6	F	F	2.01	6.0
5 lb		-11.6	-11.6	F	F	2.01	6.0
5 lb		-8.6	-8.6	F	F	2.01	6.0
1 lb		0.7	0.7	F	F	2.01	1.6
1 lb		3.1	3.1	F	F	2.01	1.6
1 lb		3.9	3.9	F	F	2.01	1.6
1 lb		3.7	3.7	F	F	2.01	1.6
1 lb		0.4	0.4	F	F	2.01	1.6
0.5 lb		2.4	2.4	F	F	2.01	1.3
0.2 lb		8.48	8.48	F	F	2.02	0.22
0.2 lb		11.10	11.10	F	F	2.02	0.22
0.1 lb		-1.92	-1.92	F	F	2.02	0.14
0.05 lb		2.88	2.88	F	F	2.02	0.11
0.02 lb		0.283	0.283	F	F	2.02	0.066
0.02 lb		0.500	0.500	F	F	2.02	0.066
0.01 lb		0.706	0.706	F	F	2.02	0.052



REC'D OCT - 3 2017

Receipt Date: June 27, 2017  
 Cal. Date: July 7, 2017  
 Report Date: July 7, 2017

Report No.: 337900  
 Set Serial No.: FARGO WEIGHT SET #2  
 Barcode: 201683

Continued,

**Calibration Certificate**

NORTH COUNTRY BUSINESS PRODUCTS  
 1112 RAILROAD ST SE  
 BEMIDJI, MN 56619-0910  
 Contact: Carol Braun  
 Phone: 218-722-3528  
 PO Number: None  
 Procedure: NIST SOP 8  
 Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - Class F  
 Manufacturer: Rice Lake  
 Weight Type: I & II  
 Equipment ID: None  
 Condition: Good  
 Temperature: 19.3 °C  
 Pressure: 737.7 mmHg  
 Relative Humidity: 46.0 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
0.005 lb		0.335	0.335	F	F	2.02	0.073
0.002 lb		0.338	0.338	F	F	2.02	0.047
0.002 lb		0.438	0.438	F	F	2.02	0.047
0.001 lb		0.380	0.380	F	F	2.02	0.041

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist



**DEPARTMENT OF COMMERCE**  
**WEIGHTS & MEASURES DIVISION**

14305 Southcross Drive #150  
 Burnsville, MN 55306-7008  
 mn.gov/commerce/  
 651.539.1555 FAX 952.435.4040  
 An equal opportunity employer

REC'D OCT - 3 2017

Receipt Date: June 27, 2017  
 Cal. Date: July 7, 2017  
 Report Date: July 7, 2017

Report No.: 337902  
 Set Serial No.: None  
 Barcode: 201261

**Calibration Certificate**

NORTH COUNTRY BUSINESS PRODUCTS  
 1112 RAILROAD ST SE  
 BEMIDJI, MN 56619-0910  
 Contact: CAROL BRAUN  
 Phone: 218-722-3528  
 PO Number: None  
 Procedure: NIST SOP 8  
 Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - Class F  
 Manufacturer: Rice Lake  
 Weight Type: I & II  
 Equipment ID: None  
 Condition: Good  
 Temperature: 19.4 °C  
 Pressure: 738.3 mmHg  
 Relative Humidity: 43.7 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb		99.4	99.4	F	F	2.01	6.0
5 lb		62.4	62.4	F	F	2.01	6.0
5 lb		70.4	70.4	F	F	2.01	6.0
5 lb		72.4	72.4	F	F	2.01	6.0
5 lb		73.4	73.4	F	F	2.01	6.0
1 lb		20.9	20.9	F	F	2.01	1.6
1 lb		24.4	24.4	F	F	2.01	1.6
1 lb		26.7	26.7	F	F	2.01	1.6
1 lb		22.3	22.3	F	F	2.01	1.6
1 lb		19.6	19.6	F	F	2.01	1.6
0.5 lb		22.9	22.9	F	F	2.01	1.3
0.2 lb		11.60	11.60	F	F	2.02	0.22
0.2 lb		2.81	2.81	F	F	2.02	0.22
0.1 lb		1.11	1.11	F	F	2.02	0.14
0.05 lb		1.58	1.58	F	F	2.02	0.11
0.02 lb		0.458	0.458	F	F	2.02	0.066
0.02 lb		0.249	0.249	F	F	2.02	0.066
0.005 lb		0.199	0.199	F	F	2.02	0.073
0.002 lb		0.392	0.392	F	F	2.02	0.047
0.002 lb		0.140	0.140	F	F	2.02	0.047
0.001 lb		-0.058	-0.058	F	F	2.02	0.041

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin

Metrologist

Reviewed by:

Pete Whebbe

Metrologist



**REC'D OCT - 3 2017**

Receipt Date: July 17, 2017  
 Cal. Date: July 27, 2017  
 Report Date: July 27, 2017

Report No.: 337970  
 Set Serial No.: None  
 Barcode: 201687

## Calibration Certificate

**NORTH COUNTRY BUSINESS PRODUCTS**  
 541 S AIRPORT ROAD  
 BISMARCK, ND 58504  
 Contact: CAROL BRAUN  
 Phone: 218-722-3528  
 PO Number: None  
 Procedure: NIST SOP 8  
 Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - Class F  
 Manufacturer: Rice Lake  
 Weight Type: I & II  
 Equipment ID: None  
 Condition: Good  
 Temperature: 19.5 °C  
 Pressure: 739.3 mmHg  
 Relative Humidity: 45.7 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb		11.4	11.4	F	F	2.01	6.0
5 lb		4.4	4.4	F	F	2.01	6.0
5 lb		0.4	0.4	F	F	2.01	6.0
5 lb		-6.6	-6.6	F	F	2.01	6.0
5 lb		21.4	21.4	F	F	2.01	6.0
1 lb		2.1	2.1	F	F	2.01	1.6
1 lb		24.5	24.5	F	F	2.01	1.6
1 lb		20.7	20.7	F	F	2.01	1.6
1 lb		9.9	9.9	F	F	2.01	1.6
1 lb		7.3	7.3	F	F	2.01	1.6
0.5 lb		13.2	13.2	F	F	2.01	1.3
0.2 lb		6.77	6.77	F	F	2.02	0.22
0.2 lb		8.34	8.34	F	F	2.02	0.22
0.1 lb		3.24	3.24	F	F	2.02	0.14
0.05 lb		1.49	1.49	F	F	2.02	0.11
0.02 lb		0.424	0.424	F	F	2.02	0.066
0.02 lb		0.395	0.395	F	F	2.02	0.066
0.01 lb		0.525	0.525	F	F	2.02	0.052

REC'D OCT 3 2017

Receipt Date: July 17, 2017  
Cal. Date: July 27, 2017  
Report Date: July 27, 2017

Report No.: 337970  
Set Serial No.: None  
Barcode: 201687

Continued,  
337970  
None  
201687

## Calibration Certificate


NORTH COUNTRY BUSINESS PRODUCTS  
541 S AIRPORT ROAD  
BISMARCK, ND 58504  
Contact: CAROL BRAUN  
Phone: 218-722-3528  
PO Number: None  
Procedure: NIST SOP 8  
Technician ID: 19

Item(s) Submitted: AVDP Weight Kit - Class F  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.5 °C  
Pressure: 739.3 mmHg  
Relative Humidity: 45.7 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
0.005 lb		0.740	0.740	F	F	2.02	0.073
0.002 lb		0.390	0.390	F	F	2.02	0.047
0.002 lb		0.391	0.391	F	F	2.02	0.047
0.001 lb		0.389	0.389	F	F	2.02	0.041

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Erik Alfvin  
  
Metrologist

Reviewed by:  
Pete Whebbe  
  
Metrologist



**DEPARTMENT OF COMMERCE**  
WEIGHTS & MEASURES DIVISION

14305 Southcross Drive #150  
Burnsville, MN 55306-7008  
mn.gov/commerce/  
651.539.1555 FAX 952.435.4040  
An equal opportunity employer

REC'D OCT 3 2017

Receipt Date: August 22, 2017  
Cal. Date: September 1, 2017  
Report Date: September 5, 2017

Report No.: 338131  
Set Serial No.: Fargo Weight Set #1  
Barcode: 201693

**Calibration Certificate**

NORTH COUNTRY BUSINESS PRODUCTS  
4626 AMBER VALLEY PKWY S  
FARGO, ND 58104  
Contact: TERI KAVA  
Phone: 701-277-3231  
PO Number: NONE  
Procedure: NIST SOP 8  
Technician ID: 09

Item(s) Submitted: 30 lb kit w/ decimals  
Manufacturer: Rice Lake  
Weight Type: I & II  
Equipment ID: None  
Condition: Good  
Temperature: 19.3 °C  
Pressure: 739.6 mmHg  
Relative Humidity: 45.1 %

Nominal Value	Serial No.	CM Correction (mg)		NIST HB105-1 Class		k	U (mg)
		As Found	As Left	As Found	As Left		
5 lb		63.2	63.2	F	F	2.01	6.0
5 lb		62.2	62.2	F	F	2.01	6.0
5 lb		60.2	60.2	F	F	2.01	6.0
5 lb		59.2	59.2	F	F	2.01	6.0
5 lb		63.2	63.2	F	F	2.01	6.0
1 lb		19.5	19.5	F	F	2.01	1.6
1 lb		4.0	4.0	F	F	2.01	1.6
1 lb		2.6	2.6	F	F	2.01	1.6
1 lb		14.7	14.7	F	F	2.01	1.6
1 lb		6.6	6.6	F	F	2.01	1.6
0.5 lb		16.5	16.5	F	F	2.01	1.6
0.2 lb		4.72	4.72	F	F	2.01	1.3
0.2 lb		4.85	4.85	F	F	2.02	0.22
0.1 lb		3.06	3.06	F	F	2.02	0.22
0.05 lb		1.38	1.38	F	F	2.02	0.14
0.02 lb		0.373	0.373	F	F	2.02	0.11
0.02 lb		-0.692	-0.692	F	F	2.02	0.066
0.01 lb		0.157	0.157	F	F	2.02	0.066
0.005 lb		0.761	0.761	F	F	2.02	0.052
0.002 lb		0.185	0.185	F	F	2.02	0.073
0.002 lb		0.112	0.112	F	F	2.02	0.047
0.001 lb		0.246	0.246	F	F	2.02	0.047

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm<sup>3</sup> density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Heidi Jones  
*Heidi Jones*  
Laboratory Administrator

Reviewed by:  
Pete Whebbe  
*Pete Whebbe*  
Metrologist

# United States Department of Commerce

## National Institute of Standards and Technology

Certificate of Metrological Traceability For:

# Minnesota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

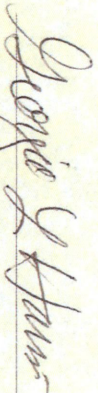
The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

### Scope

<b>Mass Echelon I</b> 10 kg to 1 mg	<b>Mass Echelon III</b> 50 kg to 1 mg 5000 lb to 0.001 lb 4 oz to 0.03125 oz	<b>Volume Gravimetric, I</b> 20 L to 10 ml 100 gal to 0.25 qt
<b>Mass Echelon II</b> 50 kg to 1 mg 1000 lb to 0.001 lb 4 oz to 0.03125 oz	<b>Weight Carts</b> 10 000 lb to 2000 lb	<b>Volume Transfer, II</b> 1500 gal to 5 gal 100 gal to 25 gal LPG
	<b>Wheel Load Weighers</b> 20 000 lb to 2000 lb	
	<b>Railroad Test Cars</b> 110 000 lb to 80 000 lb	



2017

  
Georgia L. Harris, Acting Chief  
NIST Office of Weights and Measures

Effective Dates: 2017-01-01 to 2017-12-31

Amended: 2016-12-31  
Scope modified for 2017.